To Test the Death Ray in an Actual Duel

The Startling Challenge of an American Aviator to Take the Sky and Do Battle Against the Most Diabolical Bolt Inventor Grindell-Matthews Can Produce.

H. Grindell-Matthews, British Scientist and Inventor of the Challenged Death Ray.

The Fate of This Sky Cruiser Is What Grindell-Matthews Says Would Occur on a Large Scale If His Ray Began to Rake a Hostile Air Fleet.

Walter Sutter, Elizabeth N. J., Aviator Who Has Challenged the "Death Ray" to a Duel in the Skies.

TENNYSON'S vision of grappling air navies—already realized—may shortly be superseded by an even more sinister duel in the skies. This time it will be mankind against the laboratory; human courage and skill against a death-freighted beam of light. And on the result may conceivably hang the destinies of the race.

The spokesmen of Mr. H. Grindell-Matthews, British scientist and inventor of the latest "death ray," have spread out before the world a picture of wheeling air fleets being stopped in mid-flight and dropping to earth like flies in a furnace room. This ray, they declare, is the last cry in human destructiveness. The man behind the "death ray" will have the power of life and death over whole armies and vast sections of population. Moreover its scourging intensity will be enough to strike down the cattle in the fields and literally incinerate all tree and plant life in its path.

A grim prospectus! But not so grim as to go unchallenged.

Walter Sutter, of Elizabeth, N. J., an American aviator in the World War and now a civilian flyer, declares that an aviator who can dodge a stream of machine-gun bullets is capable of holding his own even against a death ray. At any rate he is willing to make the trial in behalf of the United States Government or any recognized international body. At any time and under any fair conditions he is ready to take the air and give leave to the "death ray" to do its worst.

Mr. Sutter's defi to the death ray is not based on a scientific doubt as to its efficacy. He has offered his services in order to insure an experiment being made under the same conditions that would prevail during actual warfare.

Formal proposals have not yet been made to Mr. Grindell-Matthews, but he is understood to be willing that such a test should be made.

Meanwhile scientific groups on both sides the Atlantic have been speculating on the nature of the closely guarded Grindell-Matthews invention. Physicists and electrical research experts are always ready to admit that some new principle of projecting energy may at any time be discovered.

But from what has been told about the ray scientists feel they are justified in saying that if it exists at all, it must be one of the five rays dangerous to human life which have already been discovered. These are:

The X-Ray.
The Radium Ray.
The Heat Ray.
The Ultra-Violet Ray.
The High-Frequency Electrical "Field."

The body of science represented in the person of Dr. Alfred N. Goldsmith, head of the Department of Electrical Engineering in the College of the City of New York, and others, is inclined to doubt, therefore, that the Grindell-Matthews ray can have the devastating lethal effects that its inventor claims for it. For while he may have discovered a way of projecting high-voltage flashes to a definite destination, all the known dangerous rays are capable of being nullified by metal protectors.

The X-ray, first of these dangerous rays, is capable of causing great irritation and even cancer of the flesh, if the flesh is exposed to it unprotected for a ten or fifteen minute period. And while it is a short ray it is theoretically possible that a high powered electric plant could project it thousands of feet. What its effect would be, however, is problematical, as it has never had an instantaneous lethal effect under any past conditions.

Artist's Conception of How a Death Bolt Might Be Launched.

What Happened to Another Airplane When Its Engine Got Out of Order.

The radium ray is immediately eliminated from consideration by all as the kind of ray used by Grindell-Matthews for the reason that no quantity of that mineral now known to be in existence is capable of projecting a ray for more than ten feet. Its cost for military or any large scale use is prohibitive. So far as is known there is not enough radium in the world to make successful a single day's operations.

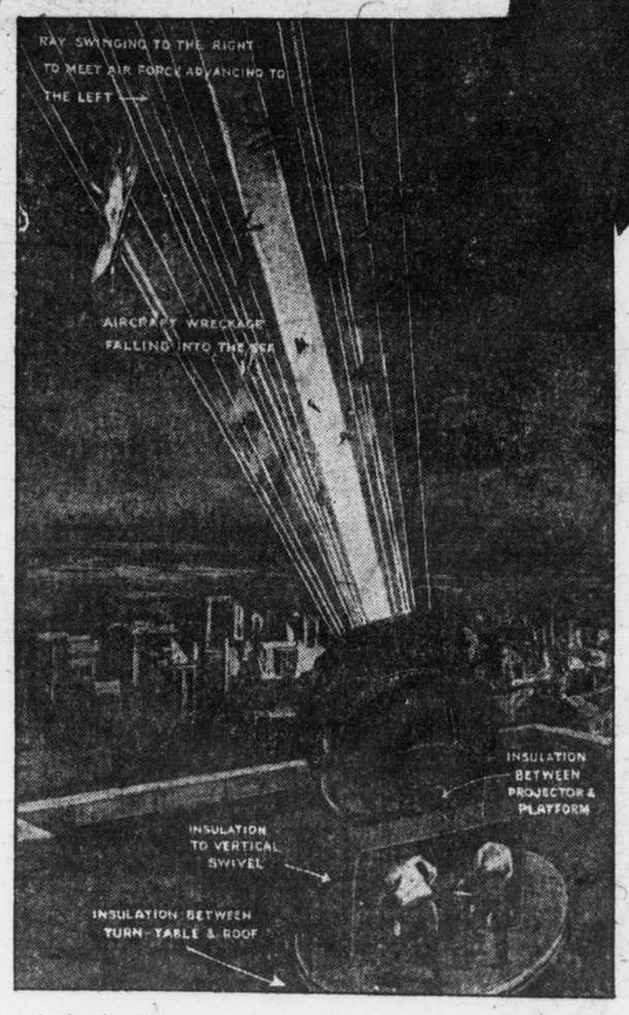
The ultra-violet ray, which is produced electrically, is a beam of light so intense that no color except the violet is visible. It is theoretically capable of inflicting great physical damage if directed in sufficient force. It will also bridge a short air gap and interrupt an electric current. And, as in the recent demonstration of the Grindell-Matthews ray, the inventor used it to stop a motor, it has been widely assumed that the so called "death ray" utilizes the ultra violet ray.

"It was apparent when the automobile engine with its spark plugs was invented," said Prof. Michael Pupin of Columbia University, "that the ultra violet ray could bridge the air gap of the spark plug, making the gap a conductor of the current, stopping the spark and bringing the engine to a stop.

"But of course the ordinary spark plug is covered by the metal hood of the machine and I know of no ultra-violet ray which will pass through metals."

On the other hand, as scientists admit, it is possible that the ultra-violet ray may be used in conjunction with another. In this case the destructive force of the ultra-violet ray itself would be of no consideration as it would be acting as a dirigible conduit or channel for the other ray which, though conceivably of vast destructive force, could not otherwise be directed at its target.

It might, for instance, be used as a channel for the heat ray, which is nothing more than the ray which proceeds from an ordinary stove. Heat generated in an electrical coil might be raised to an intensity that would shrivel the wings of airplanes in the sky, but science has not yet found a way to project the heat ray to any great distance.



Drawing from the London Daily Sphere (Below) Showing an Air Squadron Crumpling Up as It Rides Unwarned Into a Lethal Beam

The high frequency electrical "field," the last form of dangerous ray, has been proved effective, according to Dr. Goldsmith, up to a few hundred feet. It is also effective at very close range—an example being the high frequency fields used in surgery for internal cauterization.

"The protective shield which can nullify the effect of each of these five dangerous rays is metal," says Dr. Goldsmith. "That is, against the X-ray, the radium ray and the ultra-violet ray a lead shield gives protection. Against heat rays a metal, water-cooled shield is effective and against the radio frequency current a copper shield may be effectively interposed.

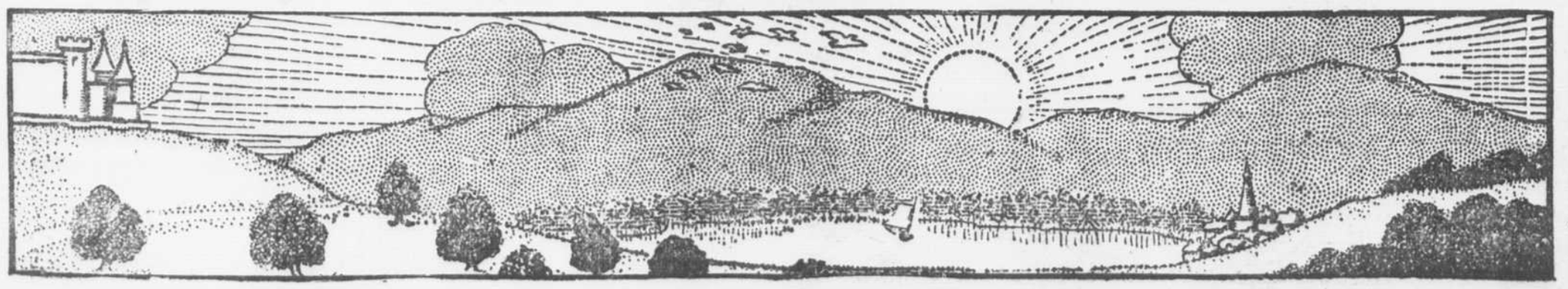
"It is perfectly possible that if a deadly or harmful ray of the high frequency sort is used in future wars, infantrymen will be protected by clothing of copper gauze. This gauze could be made of very fine drawn copper wire, weighing in all only a pound or two and its cost would not be considerable, even if a million or more soldiers had to be provided with such suits.

"To protect an airplane against such rays the magneto and engine would be shielded with copper gauze.

"Another dangerous electrical force, although it should not be classed as a ray, is artificial lightning. This has been produced, notably by G. Faccioli, chief electrical engineer of the General Electric Works at Pittsfield Mass., who produced a lightning bolt fourteen feet long by using a couple million volts. Tesla produced much longer ones, I believe, at his laboratories in Colorado Springs thirty years ago, but his were probably from an extremely high frequency current which does not have the destructive effect of the less frequent current. I have held a metal piece against a connection on such a high frequency apparatus with entire safety, but if you should try the same thing with a sixty-cycle current, such as Faccioli used, you would never know what hit you.

"It is conceivable, then, that Grindell-Matthews has discovered some way of guiding high-voltage flashes such as Faccioli produced in the Pittsfield laboratories, to a definite destination, rather than leaving them aimless. And his method of guiding them may have been by means of an ultra-violet ray which provides a dirigible duct along which an electric current may be made to flow. But so long as he refuses to disclose his system—such secrecy, by the way, being against all the ethics of scientific investigation—one can only guess at what it is by eliminating the probabilities."

That portion of the Grindell-Matthews apparatus in which the "death ray" is generated has been jealously guarded from all save the inventor's eyes. In its recesses may be contained the mystery element which will make it, as he claims, more terrible than an army with banners.

It is against this mystery element that Aviator Sutter is willing to take his chances in the interest of science and humanity.

Newspaper Feature Service, 1924.